Abstract

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[Problem] To provide a torque sensor with which a bipolar output signal can be obtained and which can reduce affects on the output signal resulting from axial eccentricity.

[Solution] A torque sensor where a first rotary shaft 1 and a second rotary shaft 2 are disposed on a common axial line L-L, with the first rotary shaft 1 and the second rotary shaft 2 being coupled together by a torsion bar 5, and which detects torsional torque applied between the first rotary shaft 1 and the second rotary shaft 2, the torque sensor comprising: magnetic field generating means 6 that generates a magnetic field in the radial direction around the common axial line L-L; magnetic field varying means 30 that varies, in response to the relative rotation between the first rotary shaft 1 and the second rotary shaft 2, the direction and size of detected magnetic flux flowing along the common axial line L-L from the magnetic field generating means 6; and a magnetic sensor 15 that detects the detected magnetic flux, wherein the magnetic sensor 15 generates an output signal whose polarity changes in response to the direction of the detected magnetic flux and whose size changes in response to the size of the detected magnetic flux.

[Selected Drawing] FIGS. 1